Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the present application.

Listing of the Claims:

Claims 1 -12. (Cancelled)

13. (Currently Amended) A method for estimating a memory-enabled transmission channel, comprising the steps of:

determining a first estimation $\underline{\hat{h}}$ of a pulse response of the memory-enabled transmission channel;

performing an estimation of an intensity level σ^2 of an additive interference of the memory-enabled transmission channel; and

performing a correction of the first estimation of the pulse response ~~while~~ by taking into consideration the estimation of the intensity level σ^2 of the additive interference of the memory-enabled transmission channel, wherein an amount of correction of the first estimation varies depending on the estimated intensity level σ^2 of the additive interference.

14. (Previously Presented) The method according to claim 13, wherein:
the step of determining the first estimation is performed by a matched filter.

15. (Previously Presented) The method according to claim 14, wherein:
the matched filter is given by

$$\underline{\hat{h}} = \frac{1}{\gamma} \cdot G^{*T} \cdot \underline{e}_{ref},$$

where

$$G = \begin{pmatrix} r_W & r_{W-1} & \cdots & r_1 \\ r_{W+1} & r_w & & r_2 \\ \cdot & \cdot & & \cdot \\ r_{W+N-1} & r_{W+N-2} & \cdots & r_N \end{pmatrix}$$

and

$$\gamma = \frac{N}{L} \cdot \|\underline{r}\|^2$$

$\underline{\mathbf{r}} = (\mathbf{r}_1,\ldots, \mathbf{r}_L)$ being a reference signal used for purposes of channel estimation, γ is a scaling factor, N is a length of a receiving-signal portion, L is a length of a chip pulse, G is a channel characteristic matrix and $\underline{e}_{ref}$ - $(\mathbf{e}_{refstart},\ldots \mathbf{e}_{refstart+N-1})$ being a received signal part that is not influenced by data transmitted before and after the reference signal.

16. (Previously Presented) The method according to claim 13, wherein: the first estimation is given by a least squares estimation.

17. (Previously Presented) The method according to claim 16, wherein: the least squares estimation is given by

$$\underline{\hat{h}} = \left(G^{*T} \cdot G\right)^{-1} \cdot G^{*T} \cdot \underline{e}_{ref}$$

18. (Currently Amended) The method according to claim 13, wherein: the step of performing the estimation of <u>the intensity level σ^2 of</u> the additive interference is given by

$$\sigma^2 = \theta\left(E - (1+f) \cdot \gamma\|\underline{\hat{h}}\|^2) \;/\; \left(N - (1+f)\right)\right)$$

with

$$\theta(x) = \begin{cases} x, & \text{if } x > 0 \\ \text{otherwise}, 0 \end{cases}$$

wherein f is a frequency value, N indicates a length of a receiving-signal portion and E is an energy value.

19. (Previously Presented) The method according to claim 13, wherein: the correction of the first estimation $\hat{h}_k$ of the k[th] component, k 0 {1,...,W}, of estimation vector $\underline{\hat{h}}$ of the pulse response **h** is given by

$$\hat{h}_k = \begin{cases} 0, & \text{if } h_k^2 < \sigma^2 / \gamma \\ \text{otherwise } h_k \end{cases}$$

20. (Previously Presented) The method according to claim 13, wherein:

the correction of the first estimation $\hat{h}_k$ of the k[th] component, k 0 {1,...,W}, of estimation vector $\underline{\hat{h}}$ of the pulse response $\underline{\mathbf{h}}$ is given by

$$\hat{h}_k = \sqrt{\theta\left(\hat{h}_k^2 - \sigma^2/\gamma\right)} \cdot \hat{h}_k / \left|\hat{h}_k\right|, \quad \text{if } \hat{h}_k \neq 0, \text{ and}$$

otherwise

$$\hat{h}_k = 0$$

21. (Previously Presented) The method according to claim 13, wherein:
the correction of the first estimation is given by a projected onto convex sets (POCS) algorithm.

22. (Previously Presented) The method according to claim 13, wherein:
the correction of the first estimation is given by a minimum mean square error (MMSE) algorithm.

23. (Previously Presented) The method according to claim 22, wherein:
the MMSE algorithm is given by

$$\underline{\hat{h}} = \left(G^{*T} \cdot G + \sigma^2 \cdot \mathrm{I}\right)^{-1} \cdot G^{*T} \cdot \underline{e}_{\text{ref}}$$

I being the unit matrix.

24. (Currently Amended) A device for estimating a memory-enabled transmission channel, comprising:
a channel estimator;
an estimator of <u>an intensity level σ^2 of</u> an additive interference, the channel estimator and the estimator of the additive interference act on a received signal; and

a channel estimation correcting element for correcting a signal of the channel estimator ~~while~~ by taking into consideration an output signal of the estimator of the intensity level σ^2 of the additive interference of the memory-enabled transmission channel, wherein an amount of correction of the signal varies depending on the estimated intensity level σ^2 of the additive interference.